



US009119745B2

(12) **United States Patent**  
**Rattner et al.**

(10) **Patent No.:** **US 9,119,745 B2**  
(45) **Date of Patent:** **Sep. 1, 2015**

(54) **ADHERENT COVER AND DISPENSER**

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(76) Inventors: **Ehud Rattner**, Haifa (IL); **Nimrod Rotem**, Haifa (IL)

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(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 396 days.

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(21) Appl. No.: **13/265,949**

(22) PCT Filed: **Apr. 22, 2010**

(86) PCT No.: **PCT/IL2010/000324**

§ 371 (c)(1),  
(2), (4) Date: **Oct. 24, 2011**

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(87) PCT Pub. No.: **WO2010/122559**

PCT Pub. Date: **Oct. 28, 2010**

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(65) **Prior Publication Data**

US 2012/0037656 A1 Feb. 16, 2012

**Related U.S. Application Data**

(60) Provisional application No. 61/171,855, filed on Apr. 23, 2009.

(51) **Int. Cl.**

**B65D 83/00** (2006.01)

**B32B 33/00** (2006.01)

**C09J 7/02** (2006.01)

**B65G 59/00** (2006.01)

**A61F 13/02** (2006.01)

**A61F 15/00** (2006.01)

(52) **U.S. Cl.**

CPC ..... **A61F 13/02** (2013.01); **A61F 13/0269** (2013.01); **A61F 15/002** (2013.01); **Y10T 428/1471** (2015.01)

(58) **Field of Classification Search**

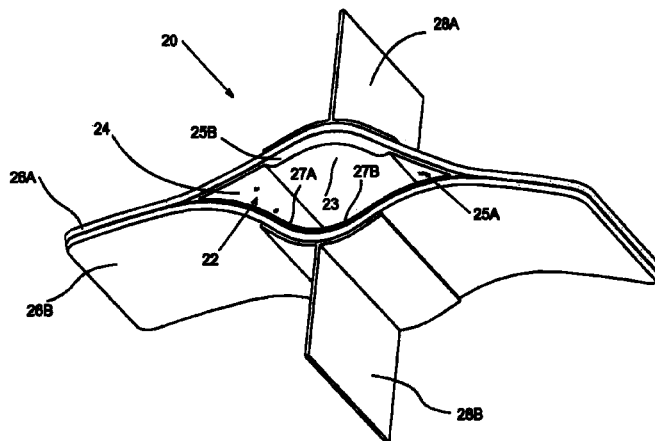
USPC ..... 221/25, 33–36, 47, 52, 56, 59, 63, 92, 221/303, 306

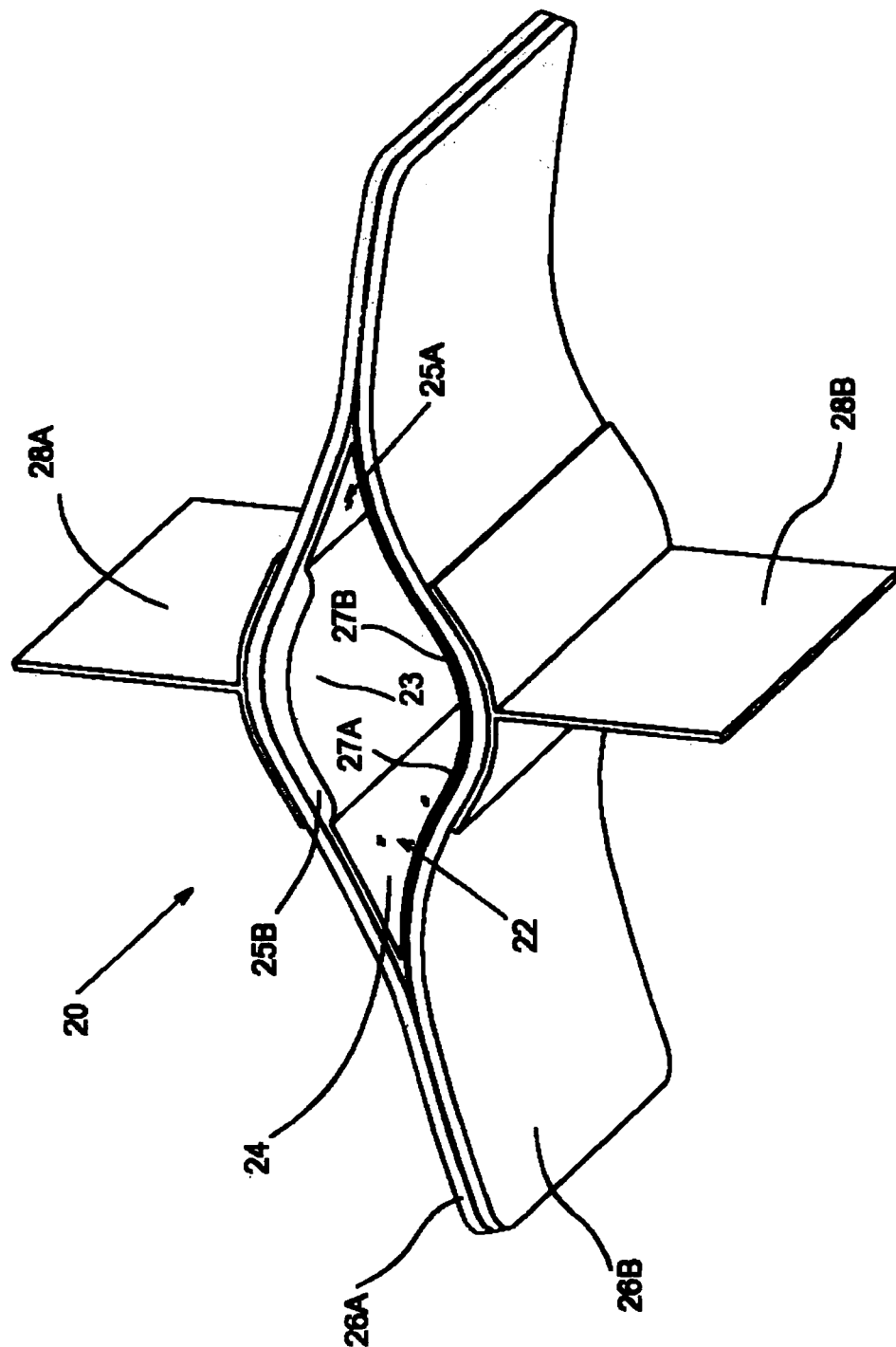
See application file for complete search history.

(57) **ABSTRACT**

A dispenser for sticky articles and a sticky article, A sticky article comprising: a skin-adherent cover, a first and a second handle and a first and a second protective element, the cover comprising: a side comprising skin-adhesive material, an opposite side and edges; the protective elements protective of the cover, each protective element extending to or beyond all edges of the cover, the first said protective element adhering to the cover opposite side and the second said protective element coupled to the cover side comprising skin-adhesive material, said first handle coupled to the first protective element and said second handle coupled to the second protective element, said first protective element configured to adhere to the cover less than the cover adheres to skin, wherein the article is configured to allow detachment of said second element and second handle from said cover when said first and second handles are pulled apart.

**5 Claims, 23 Drawing Sheets**





**FIG. 1**

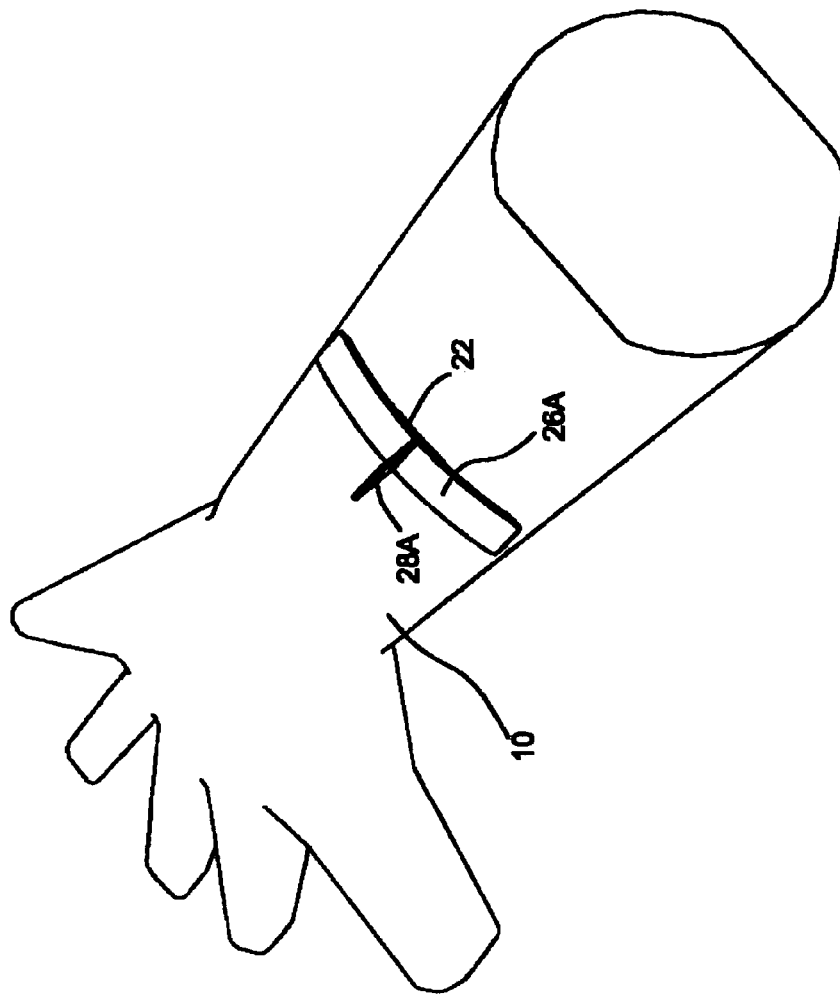


FIG. 2A

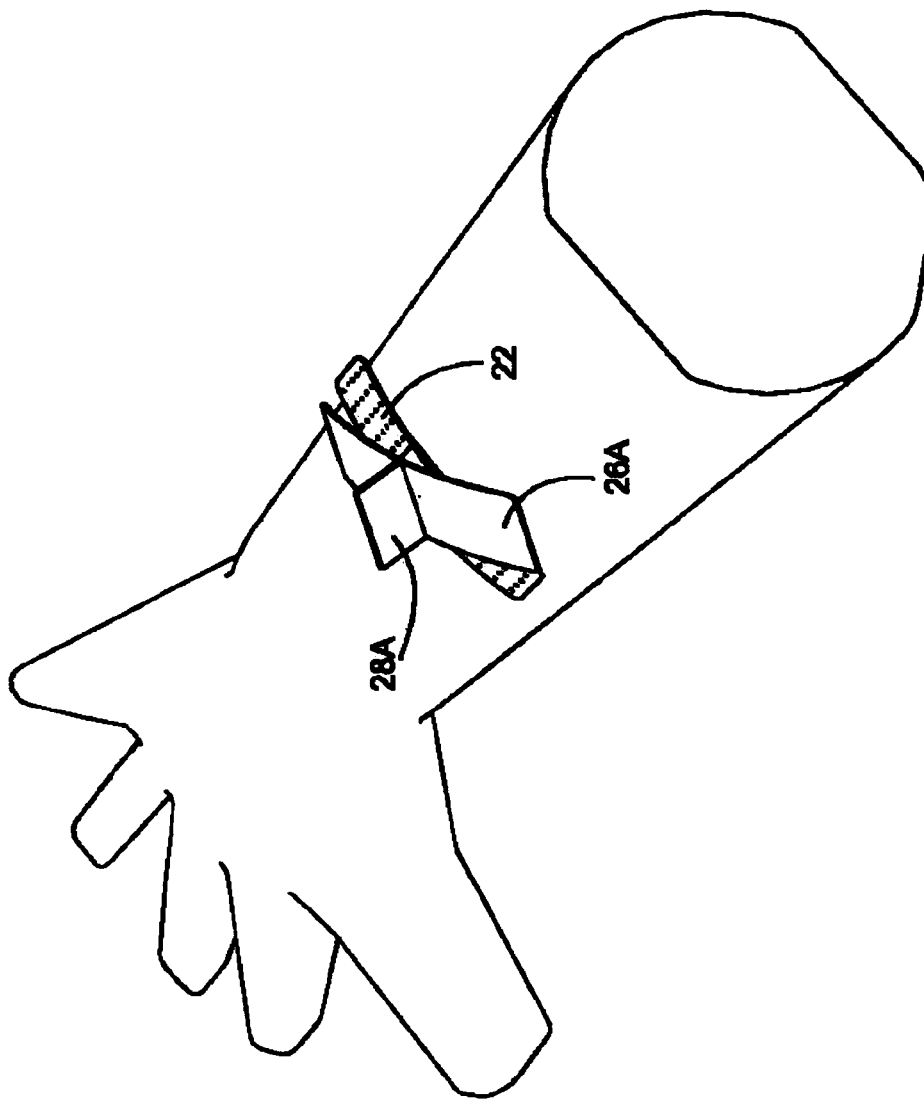


FIG. 2B

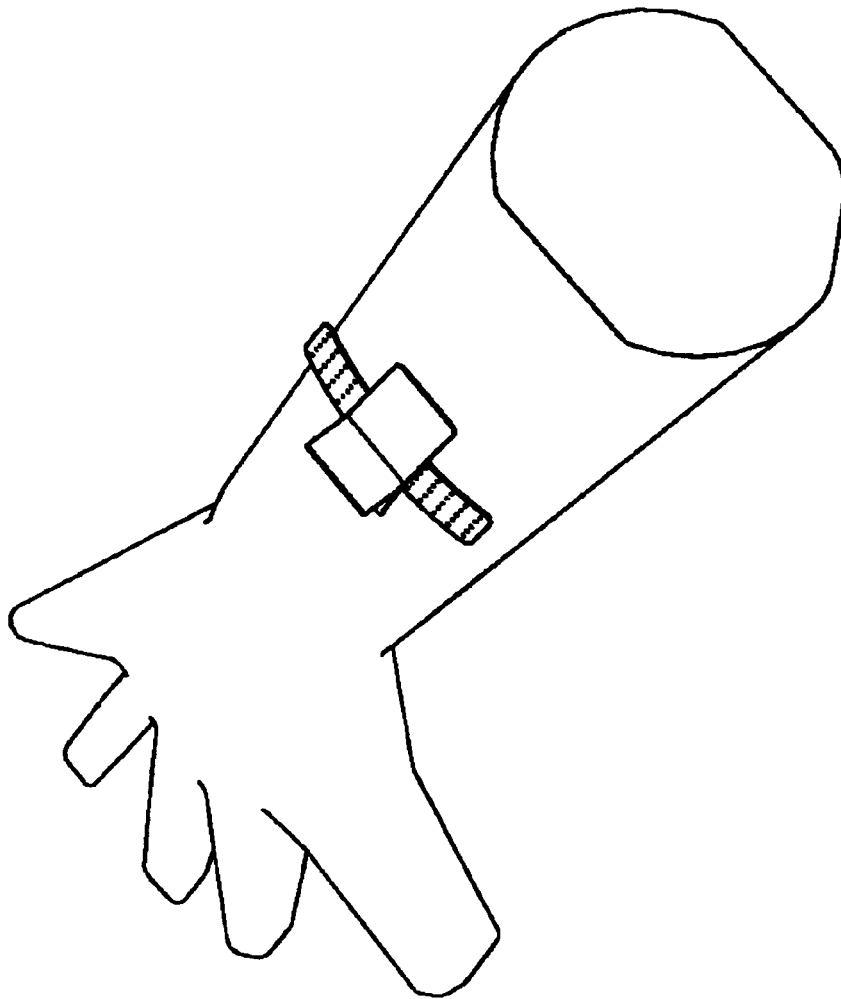


FIG. 2C

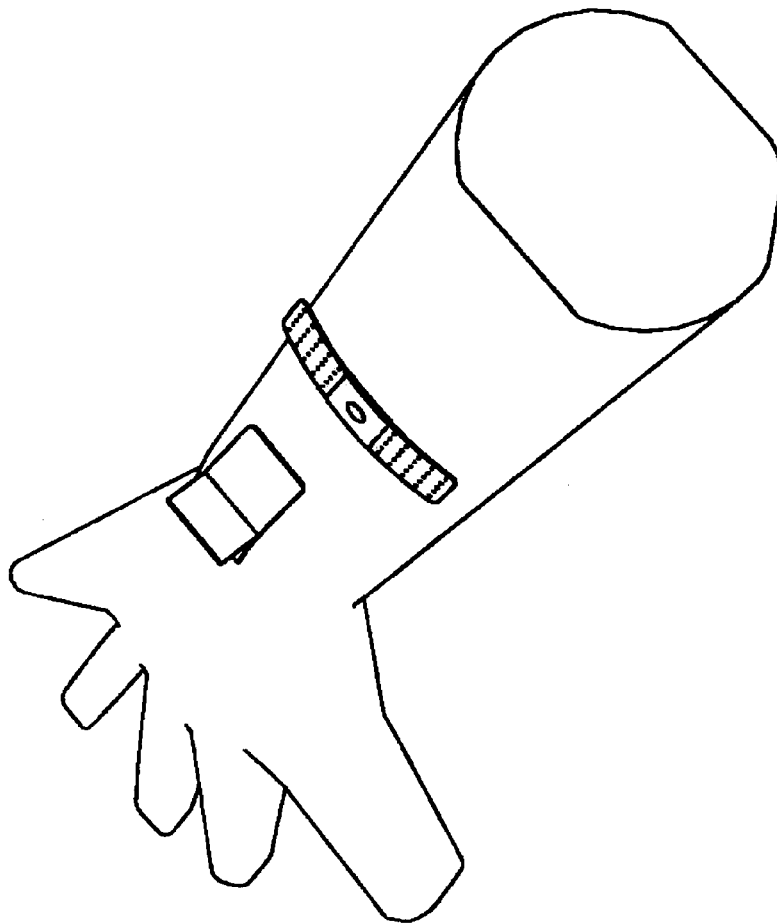


FIG. 2D

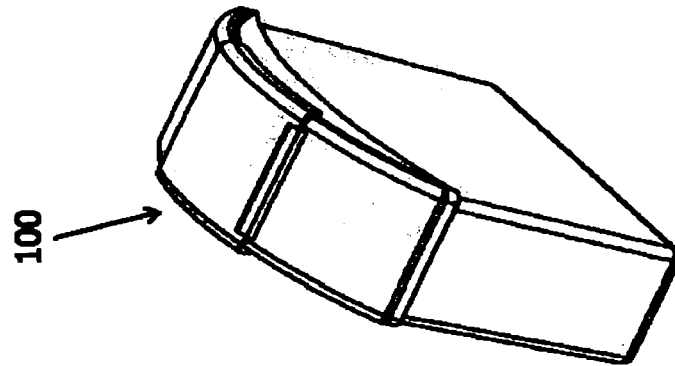


FIG. 3B

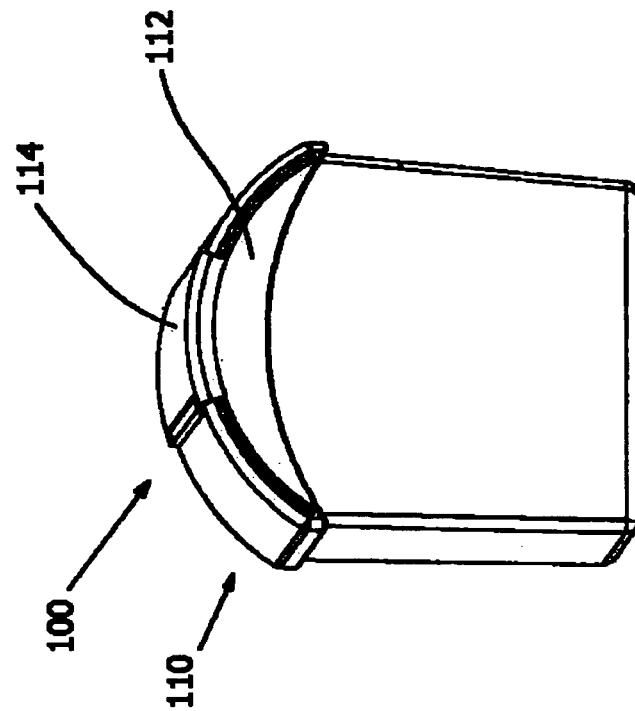


FIG. 3A

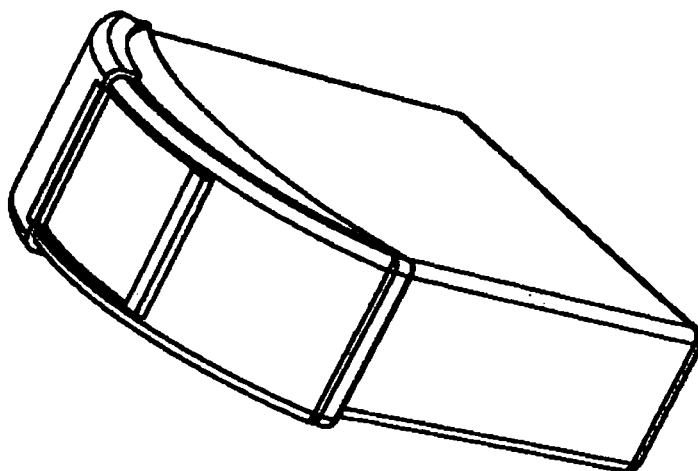


FIG. 4B

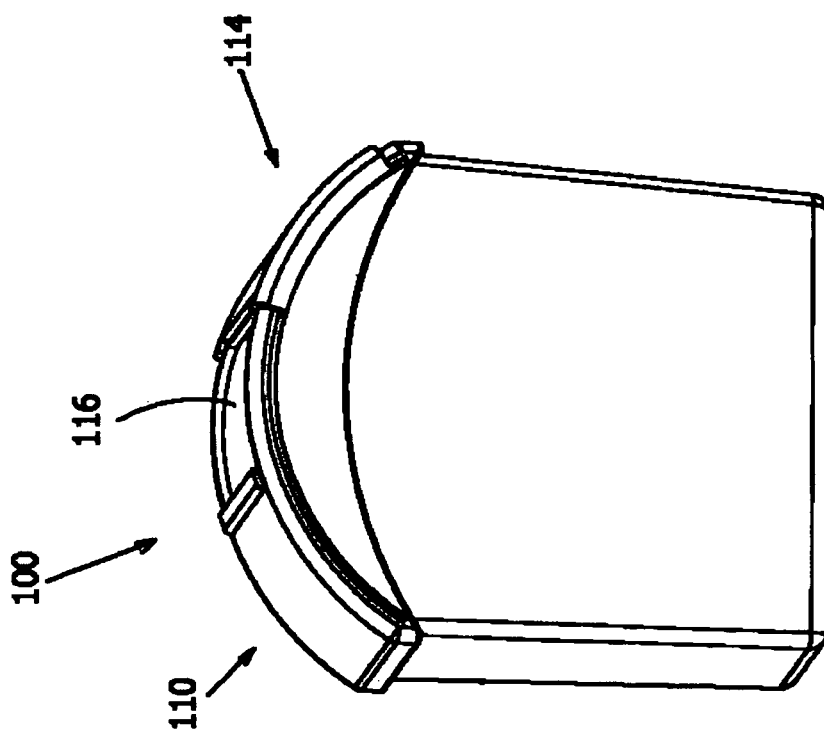


FIG. 4A



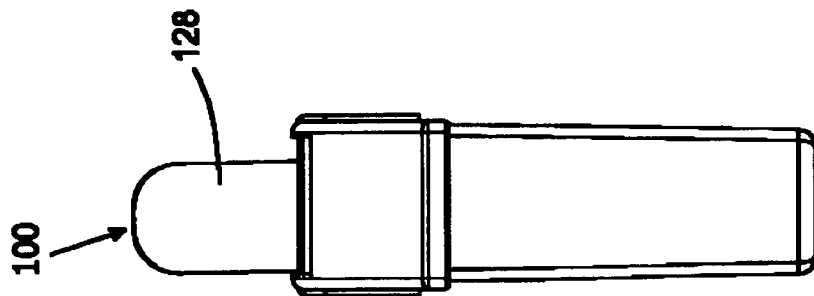


FIG. 5A

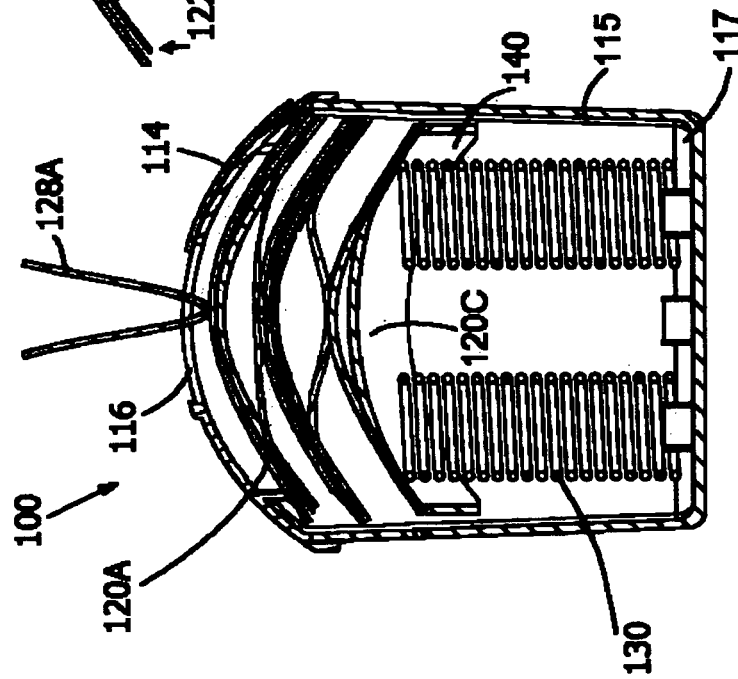


FIG. 5B

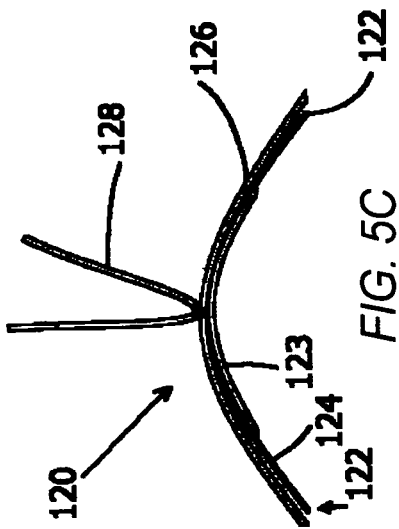


FIG. 5C

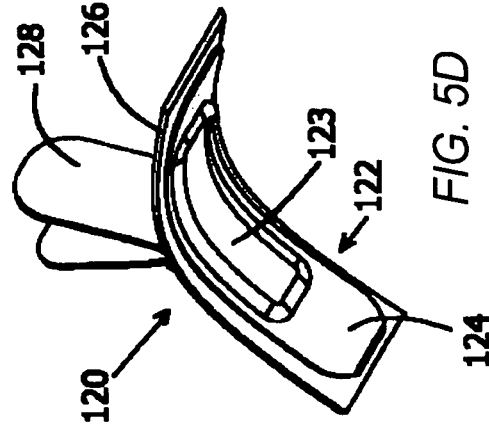


FIG. 5D

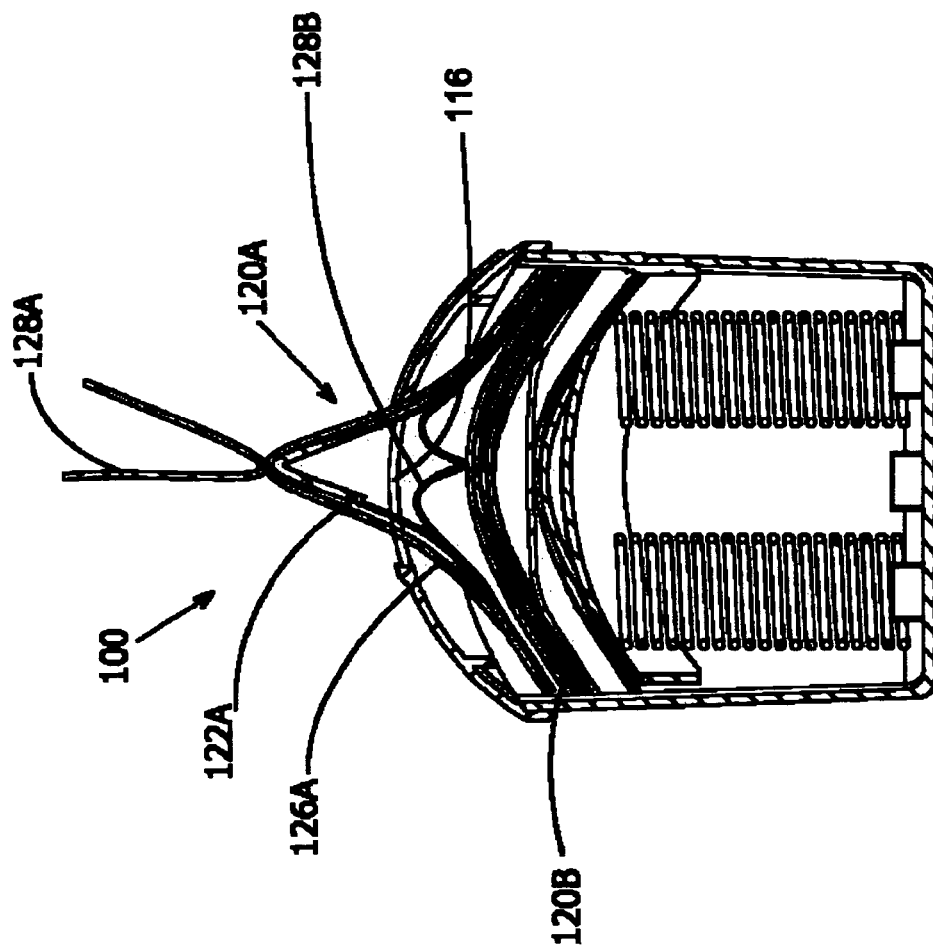


FIG. 6B

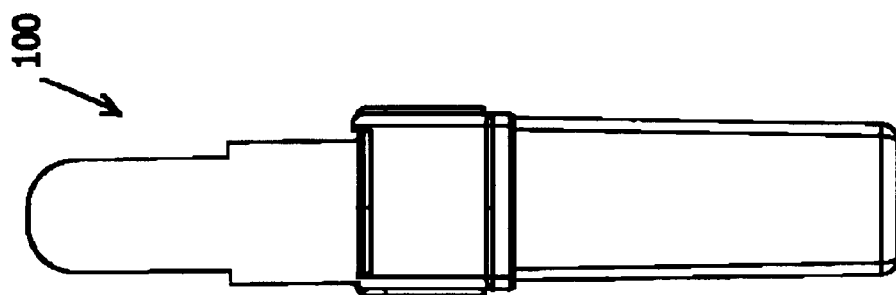


FIG. 6A

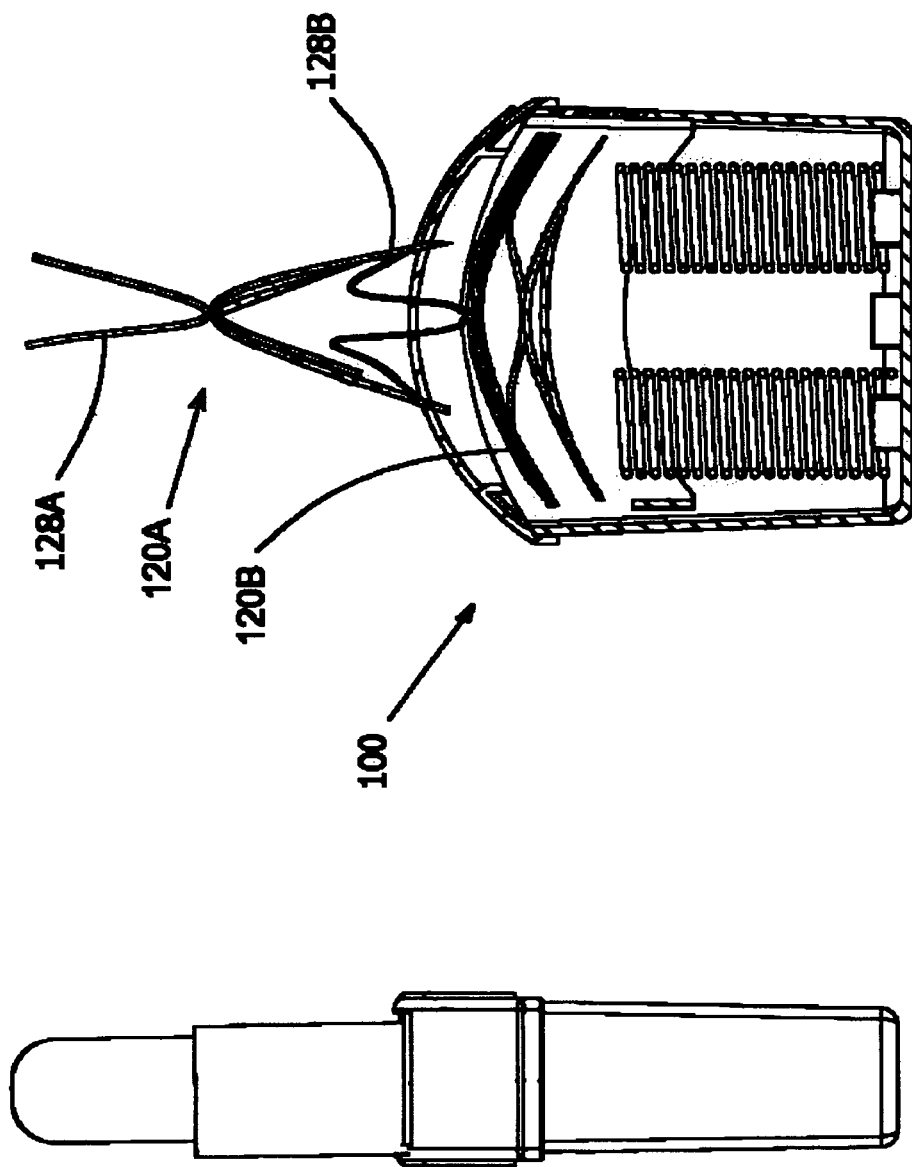


FIG. 7B

FIG. 7A

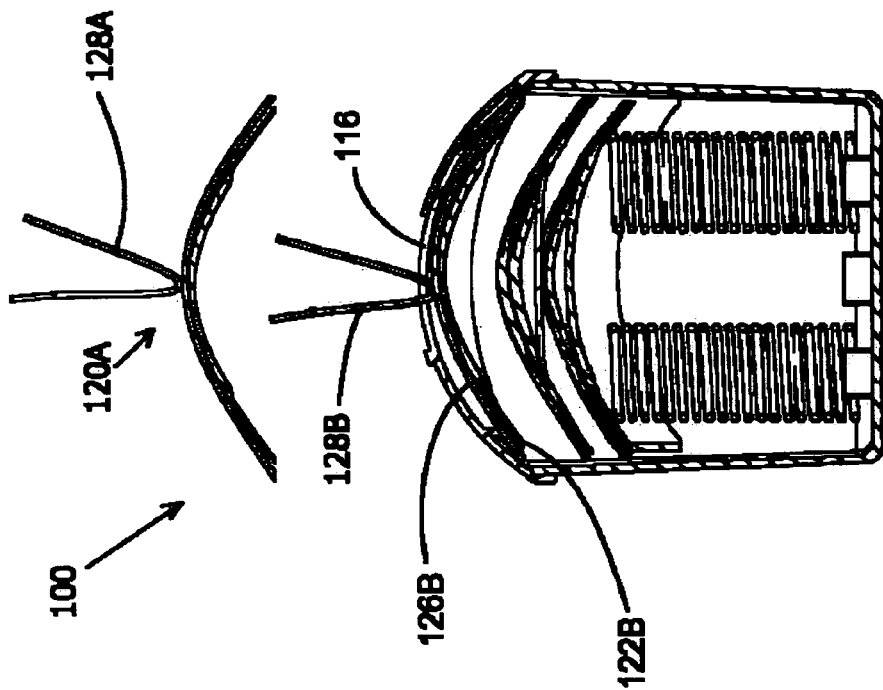


FIG. 8B

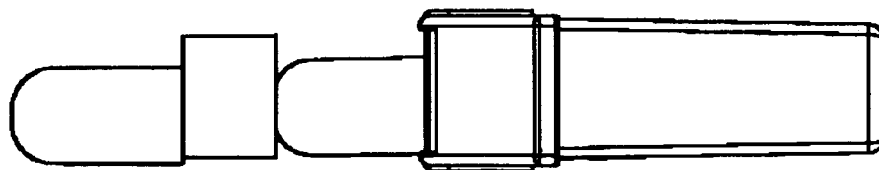


FIG. 8A

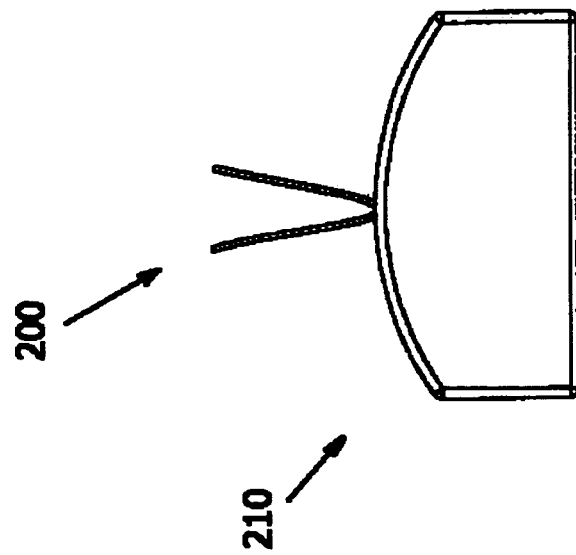


FIG. 9A

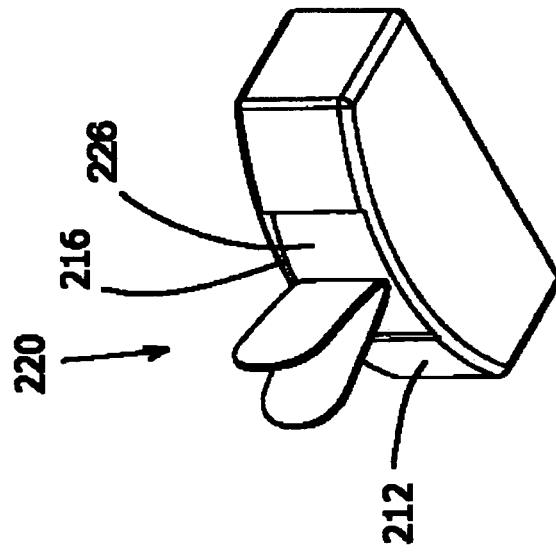


FIG. 9B

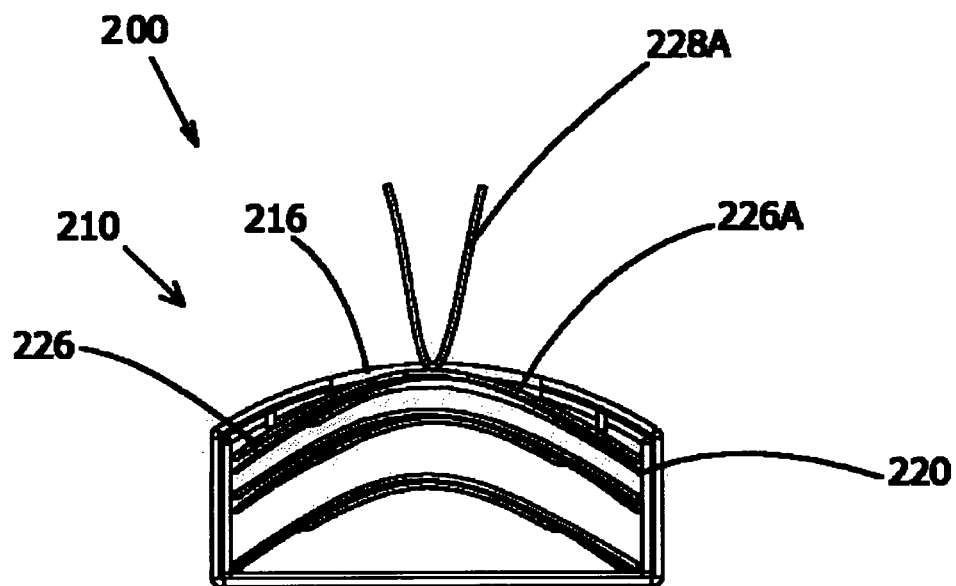


FIG. 10

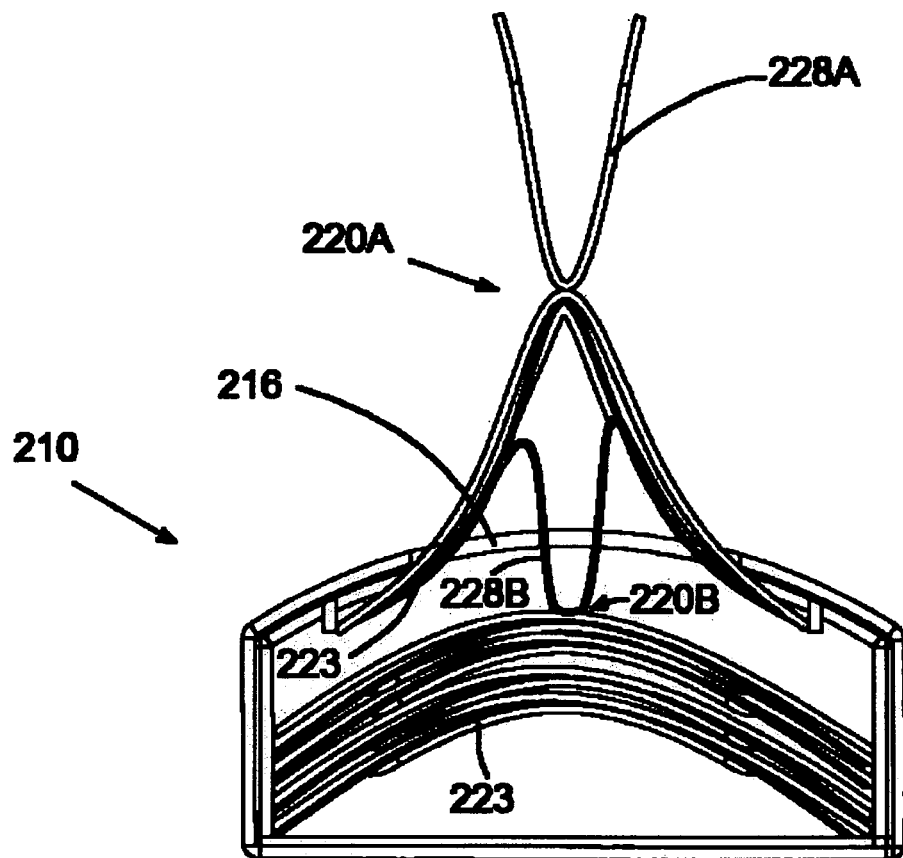


FIG. 11

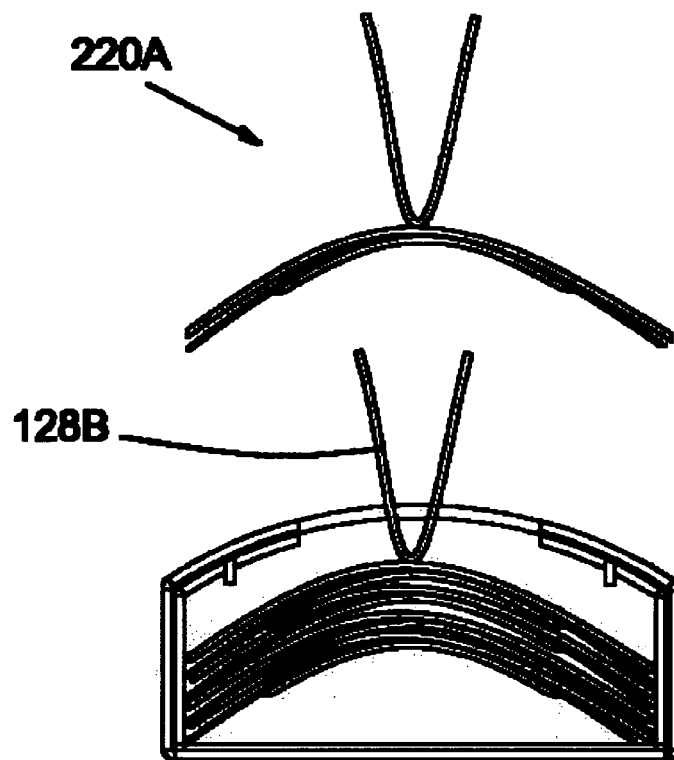
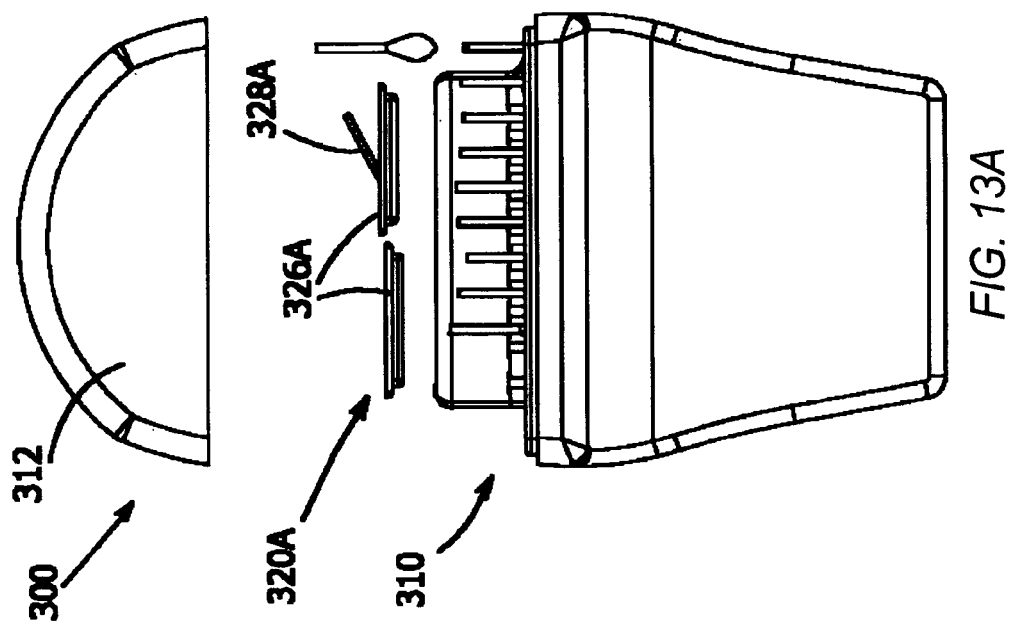
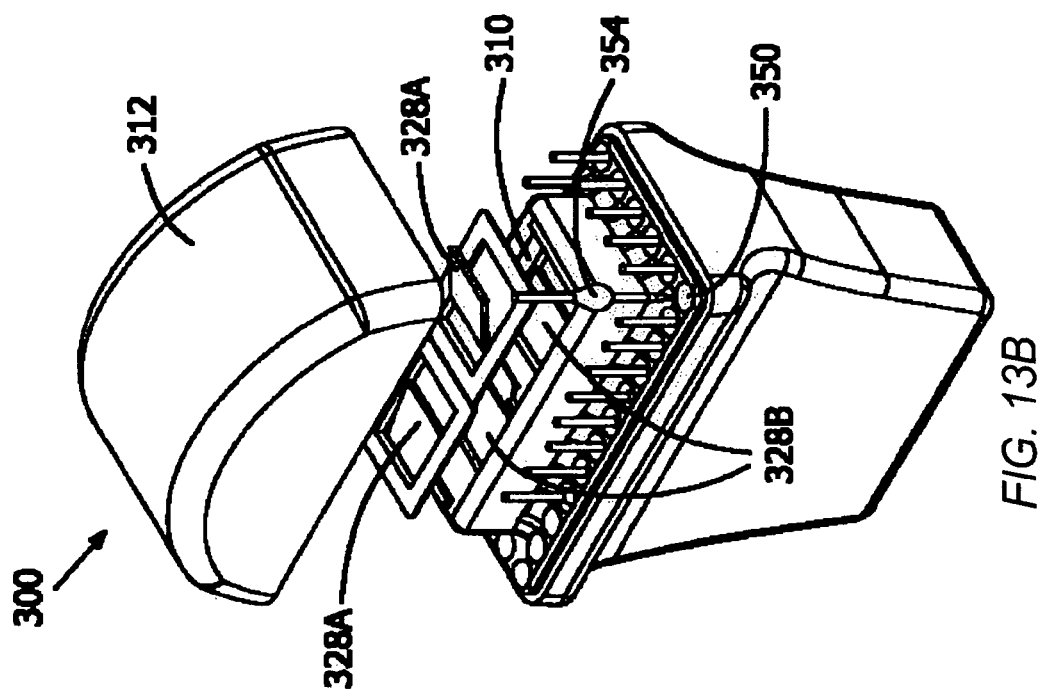


FIG. 12





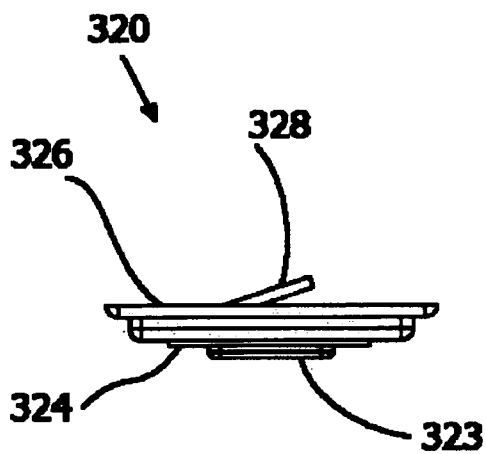


FIG. 14A

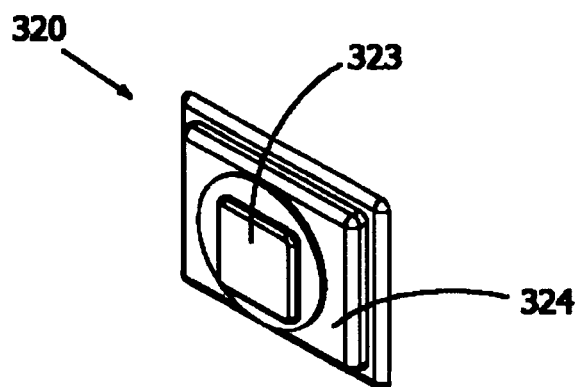


FIG. 14B

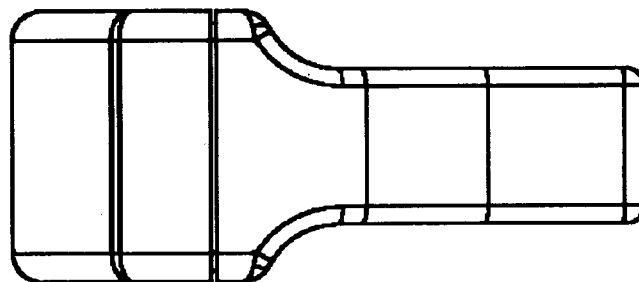


FIG. 15A

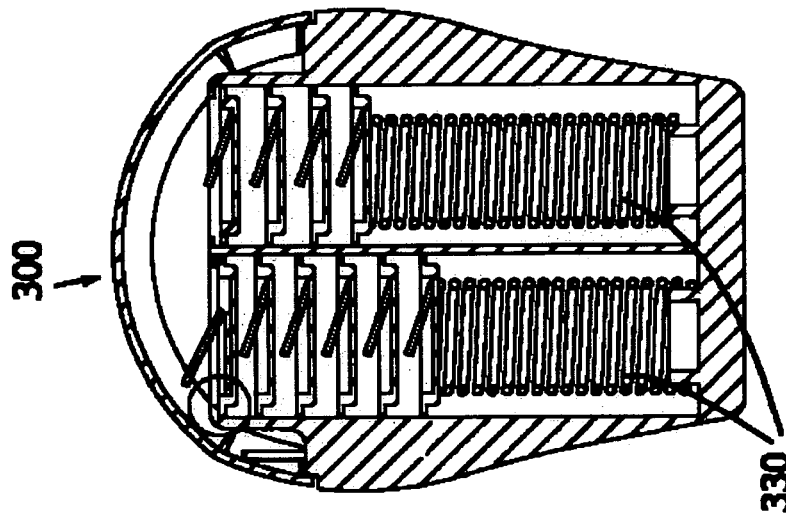


FIG. 15B

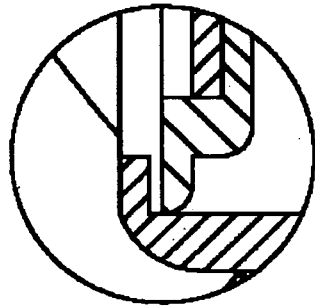


FIG. 15C

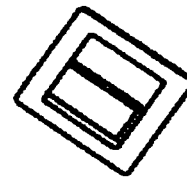


FIG. 15D



FIG. 15E

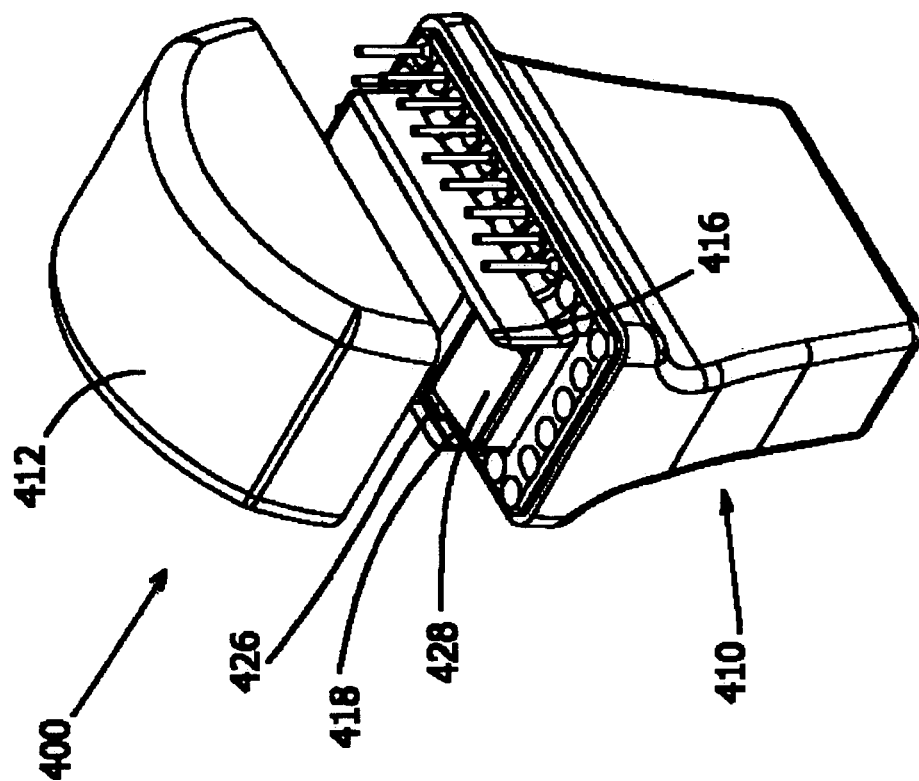


FIG. 16B

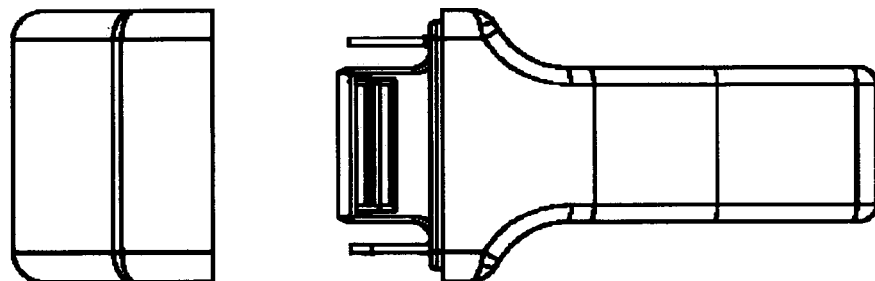


FIG. 16A

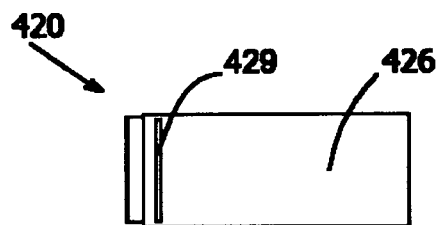


FIG. 17A

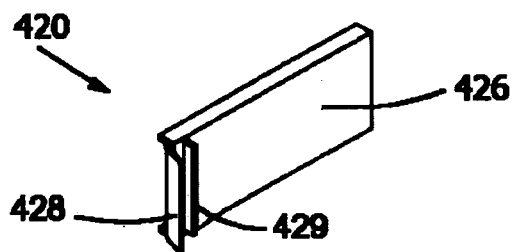


FIG. 17B

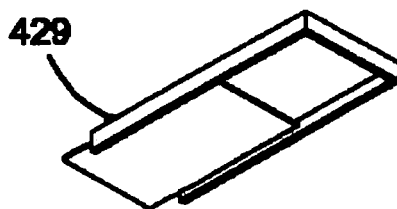


FIG. 17C

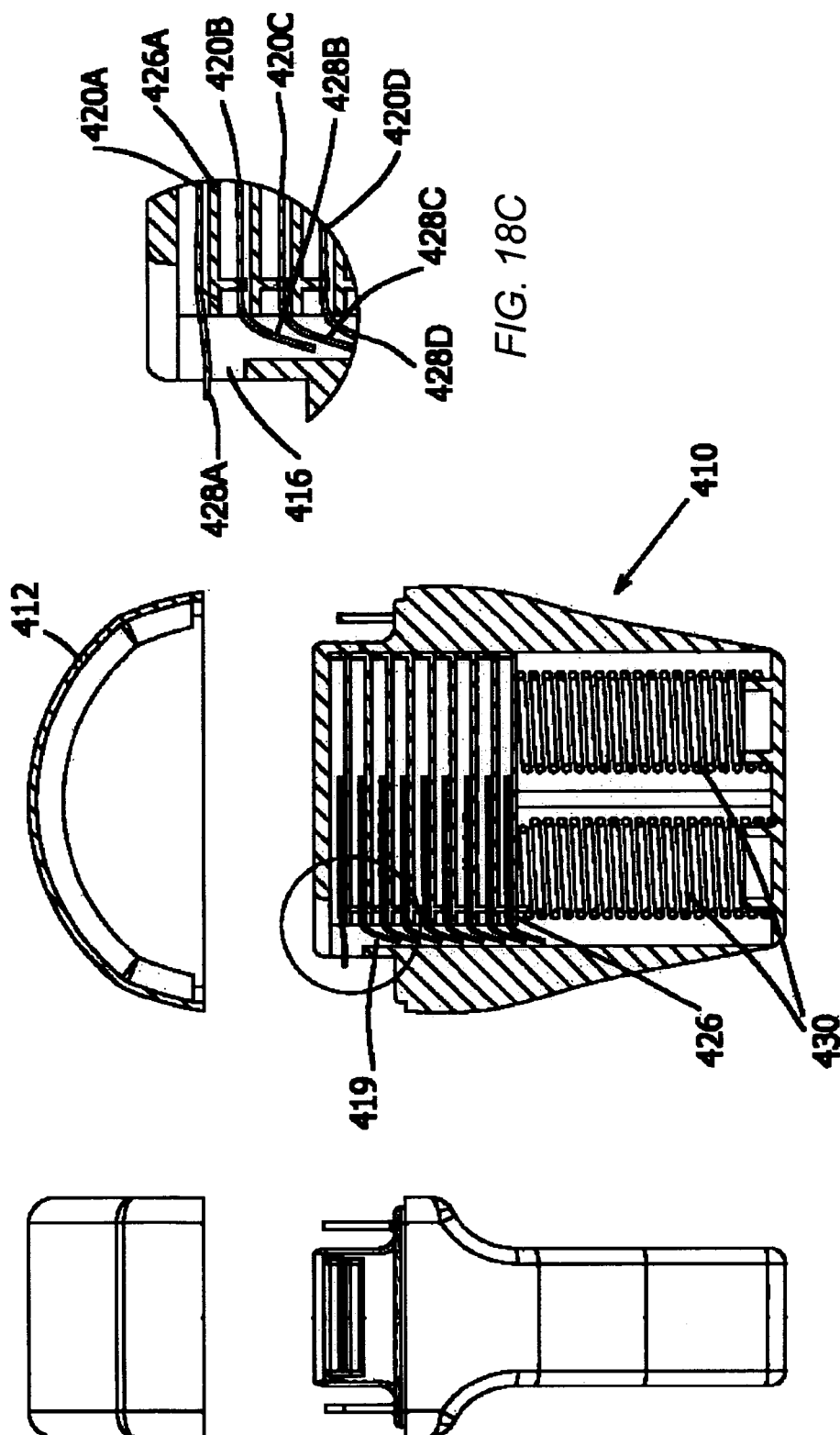


FIG. 18B

FIG. 18A

FIG. 18C

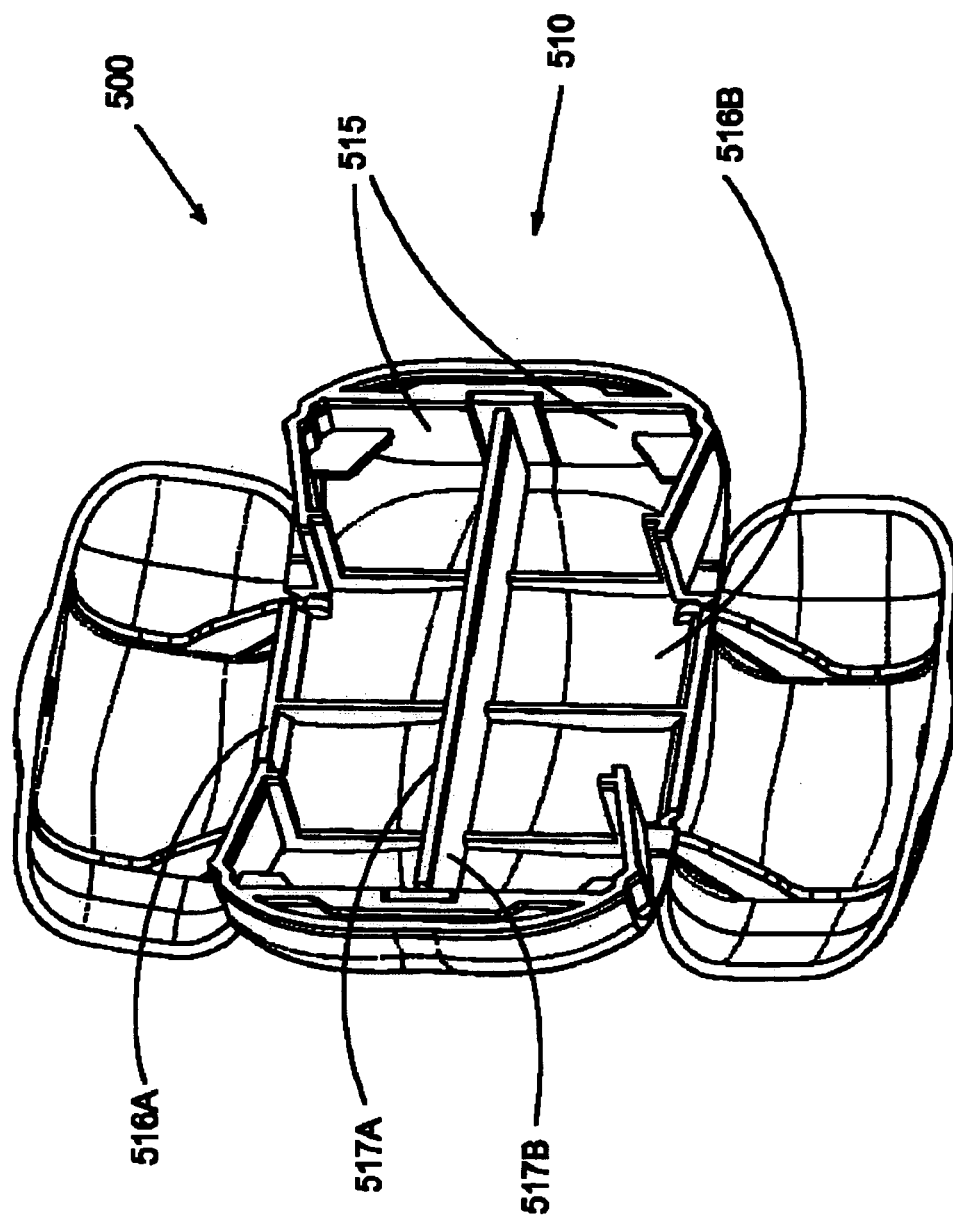


FIG. 19

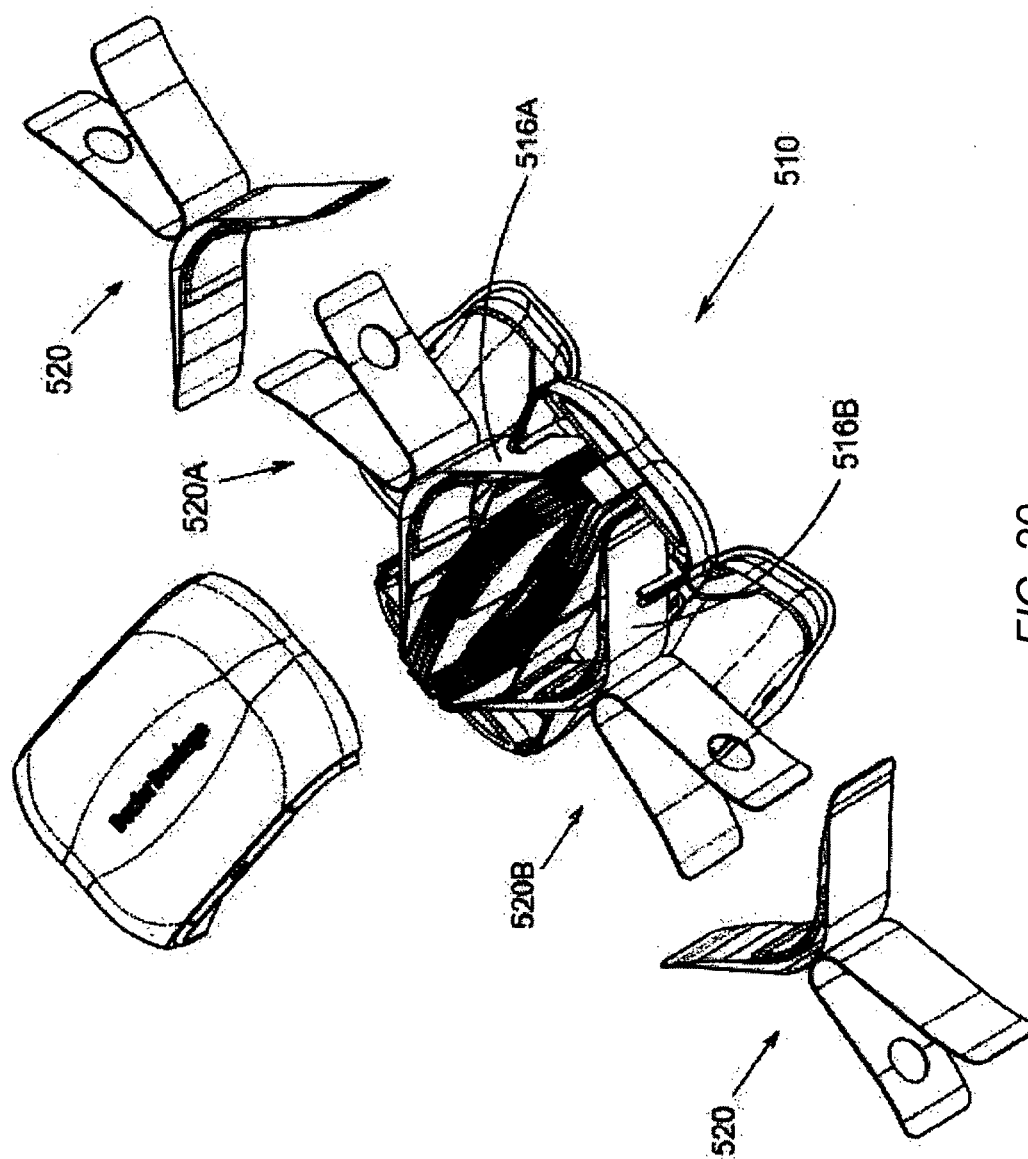


FIG. 20



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**ADHERENT COVER AND DISPENSER****FIELD OF THE INVENTION**

The present invention relates to adherent covers and their dispensers. 5

**BACKGROUND OF THE INVENTION**

A bandage are typically used to decrease prolonged loss of body fluids and stop bleeding by covering and protecting wounds such as cuts, scrapes, blisters, bruises and the like. Therefore, bandages are extensively used in hospitals, schools, at home, and basically anywhere.

Most adhesive articles including sticky skin covers such as bandages, plasters and skin patches, are packed in bulks of individual articles; however, some dispensers were developed over the years as an answer to a prolonged need.

An example is disclosed in U.S. Pat. No. 5,358,140 "Adhesive bandage dispensing system" by Pellegrino. The dispensing system includes an elongated strand of individually sterile-wrapped adhesive bandages and a reusable dispenser for dispensing the bandages. Each bandage is contained in a separate sterile compartment of an otherwise continuous wrapping material.

Another individual bandage dispenser is described in U.S. Pat. No. 5,271,522 "Individual bandage dispenser" by Ko et al., wherein the bandages are adhered to successive bandages along away from ends of the bandage. The bandages are dispensed from a gap in a top wall of a box.

The dispensers described above still require high dexterity from their user in order to be properly used, for example in removing the base layers from the adhesive material, and using the correct amount of force to pull the articles out of a gap in the top of the dispenser yet avoid tearing them off before they are fully out of the gap, and therefore merely organize the individual articles and dispense them individually.

Publication WO2008/122982 describes an adhesive bandage dispenser suitable for use by layperson that includes: a cartridge having walls, bottom, and upper opening; a plurality of stacked plates accommodated within the cartridge; a resilient element provided within said cartridge beneath a lowermost plate, wherein said resilient element is adapted to push said plurality of stacked plates toward said upper opening; an adhesive bandage mounted onto each one of said plurality of plates wherein adhesive material of said adhesive bandage is exposed, and an ejection mechanism adapted to eject an uppermost plate of said plurality of plates so as to allow a sequential plate to move upwardly towards said upper opening.

The adhesive dispenser in WO2008/122982, as shown in the figures therein, has adhesive bandages mounted onto each one of said plurality of plates such that the adhesive material (and the sterile pad) of said adhesive bandage is exposed on the side of the plate facing the upper opening. It is envisioned that in certain circumstances the upward exposure of the sterile pad is undesirable, for example small children may accidentally eject an uppermost plate without actually using the bandage mounted on the plate, or apply the bandage a long delay after exposing it to the atmosphere.

Furthermore, although the bandage dispenser described in WO2008/122982 is simple and easy to use and manufacture, further simplification of the dispenser is possible, while retaining all of the advantages of the dispenser described in WO2008/122982.

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There is still a need for new dispensers for adhesive articles in any size, of simple construction and simple to operate, that organizes the articles and dispenses them individually without the need to handle the exposure of the adhesive portions, so that the skin-adherent covers in the articles can be immediately and safely adhered onto skin without wasting valuable time.

**SUMMARY OF THE INVENTION**

One object is to provide embodiments of:

A sticky article comprising: a skin-adherent cover, a first and a second handle and a first and a second protective element,

the cover comprising: a side comprising skin-adhesive material, an opposite side and edges;

the protective elements protective of the cover, each protective element extending to or beyond all edges of the cover, the first protective element adhering to the cover opposite side and the second protective element attached to the cover side comprising skin-adhesive material,

said first handle coupled to the first protective element and said second handle coupled to the second protective element, said first protective element configured to adhere to the cover less than the cover adheres to skin,

wherein the article is configured to allow detachment of said second element and second handle from said cover when said first and second handles are pulled apart.

The articles may further comprise at least one liner non-adherently contacting the skin-adhesive material, and the second protective element adhering to the first protecting element.

In some embodiments the articles are in a stack, wherein the second handle of each article above the bottom article in the stack is the first handle of the adjacent article below.

Some embodiments provide a dispenser comprising at least one stack of articles, the dispenser further comprising a cartridge having walls, bottom and upper opening.

The covers may be selected from one or more of the group: skin patch, poultice, plaster and bandage.

In some embodiments, a sticky article dispenser comprises a cartridge,

at least one stack of articles and at least one resilient element, the cartridge having walls, at least one bottom, at least one cartridge opening and at least one cap, each cap configured to snugly cover a cartridge opening;

each article comprising:

a skin-adherent cover, handle and protective element, the cover comprising: a side comprising skin-adhesive material, an opposite side and edges, the edges facing cartridge walls; the skin-adhesive material being on the side of the cover facing away from a cartridge opening;

the handle coupled to the protective element, the protective element attached to the side of the cover facing said cartridge opening,

the protective element extending to or beyond all edges of the cover, said protective elements configured to:

protect the covers from said walls of the cartridge;

adhere to a cover less than the cover adheres to skin;

the at least one resilient element within the cartridge positioned in the cartridge below the stacks and configured to urge the skin-adherent articles in the stacks toward said cartridge opening, the dispenser configured to allow removal of a top article from a stack out of said cartridge opening.

The dispenser may be further configured to seal the skin-adherent covers from the environment outside the cartridge.

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The dispenser may be further configured to protect a cover from an adjacent article in the stack.

The resilient elements may comprise at least one spring placed beneath the stacks.

The protective elements may be resilient cards; the handles may each comprise at least one tab on the side facing a cartridge opening of each card, the tabs each comprising a part connected to the card and a part raiseable toward said cartridge opening.

The dispenser may further comprise: the cap comprising at least one cap opening and at least one lid slideable over the cap openings.

The dispenser may be capable of allowing drawing of a top article out through a cap opening.

The dispenser may have each card adhered to a top cover in a stack capable of raising the raiseable part of the tab adhered to a card of an article adjacent below toward the cartridge opening.

The dispenser may have each card configured to bend in the cartridge.

The cartridge may further comprise a platform positioned between the stacks and the springs beneath the stacks, capable of allowing protecting the covers in the stacks from the springs.

The dispenser may include protective elements that are trays, the cap being removable and the dispenser capable of sealing the stacks from the environment outside the cartridge.

Preferably, the trays are flexible.

The dispenser may have a cartridge opening on a wall, the handles each comprising at least one resilient tab facing the cartridge opening of each plate, the trays each comprising a side facing the cartridge opening and a side facing the bottom, the tray further comprising a separator on the side of the tray facing the bottom,

the tab capable of sealing the stacks from the environment outside the cartridge, the separator configured to protect a cover from an adjacent article in the stack, and the cartridge being further configured to allow sliding a top tray out of the cartridge.

The dispensers defined above may have a cartridge further comprising holes configured to hold cotton swabs.

Any of the dispensers may include a cartridge further comprising suction pads attached to the cartridge bottom, capable of holding the dispenser immovable during removal of a top skin-adherent cover article from a skin-adherent cover article stack.

Liners may be provided between the skin-adherent material on a cover in a stack, and the adjacent article below.

Each cover may be selected from one or more of the group: skin patch, poultice, plaster and bandage.

According to another aspect of the invention, a method applying a skin-adherent cover is disclosed, the method comprising:

providing a sticky article comprising: a skin-adherent cover, a first and a second handle and a first and a second protective element,

the cover comprising: a side comprising skin-adhesive material, an opposite side and edges;

each protective element extending to or beyond all edges of the cover,

the first said protective element adhering to the cover opposite side and the second said protective element coupled to the cover side comprising skin-adhesive material,

said first handle coupled to the first protective element and said second handle coupled to the second protective element, said first protective element configured to adhere to the cover less than the cover adheres to skin;

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pulling the first and second handles apart;

adhering the cover to skin;

employing the first handle to twist the first protective element until detachment of said first protective element from the cover.

Alternatively applying a skin-adherent cover comprises:

providing a sticky article dispenser comprising a cartridge, at least one stack of said articles and at least one resilient element, the cartridge having walls, at least one bottom, at least one cartridge opening and at least one cap configured to snugly cover each cartridge opening; each article comprising: a skin-adherent cover, handle and protective element, the cover comprising: a side comprising skin-adhesive material, an opposite side and edges, the edges facing cartridge walls; the skin-adhesive material being on the side of the cover facing away from a cartridge opening; the handle coupled to the protective element, the protective element attached to the side of the cover facing said cartridge opening, the protective element extending to or beyond all edges of the cover, said protective elements configured to: protect the covers from said walls of the cartridge and adhere to a cover less than the cover adheres to skin; the at least one resilient element within the cartridge positioned in the cartridge below the stacks and configured to urge the skin-adherent articles in the stacks toward said cartridge opening, the dispenser configured to allow removal of a top article from a stack out of said cartridge opening;

pulling the handle of a top article in a stack to remove an article out of said cartridge opening to outside the cartridge; adhering the cover to skin;

employing the handle to twist the protective element until detachment of said protective element from the cover.

In the application, wherein the sticky article is the top article in a stack of articles, the application may further comprise preparing the articles below in the stack for said application, the preparing comprising providing the second handle of each article above the bottom article in the stack as the first handle of the adjacent article below, such that pulling a first handle of the top article in the stack detaches the cover of the top article from the second handle of the top article and raises the second handle to a position amenable for being pulled.

Alternatively, the application further comprises preparing the articles below the top article in the stack for said application, the preparing comprising pulling the handle of the top article in the stack to raise the handle of the adjacent article below to a position amenable for being pulled.

#### BRIEF DESCRIPTION OF THE FIGURES

In order to better understand the present invention and appreciate its practical applications, the following Figures are attached and referenced herein. Like components are denoted by like reference numerals.

It should be noted that the figures are given as examples and preferred embodiments only and in no way limit the scope of the present invention as defined in the appending Description and Claims.

FIG. 1 illustrates a sticky article comprising: a skin-adherent cover, a first and a second handle and a first and a second protective element,

the cover comprising: a side comprising skin-adhesive material, an opposite side and edges;

FIG. 2A shows first stage application of the cover to skin; FIG. 2B shows the next stage of the application, in which the first handle is twisted;

FIG. 2C shows the completion of the twisting stage, and

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FIG. 2D demonstrates removal of the first handle and the first protective element from the skin;

FIG. 3A illustrates an elevated perspective view of a closed dispenser having a cartridge with skin-adherent covers attached to flexible cards within;

FIG. 3B shows another perspective view of the same;

FIG. 4A illustrates an elevated perspective view of the same dispenser open;

FIG. 4B shows another perspective view of the open dispenser;

FIG. 5A illustrates a side view of the same dispenser, the dispenser containing article stacks, springs and a platform;

FIG. 5B shows a cross sectional frontal view of the same dispenser;

FIG. 5C shows a view of an article including a skin-adherent cover, card and tab;

FIG. 5D shows another view of the article illustrated in FIG. 5C;

FIG. 6A illustrates a side view of the same dispenser, a top article being partially pulled out of the cartridge;

FIG. 6B shows a cross sectional frontal view of the same;

FIG. 7A illustrates a side view of the same dispenser, the top article being further pulled out of the cartridge;

FIG. 7B shows the same from a cross sectional frontal view;

FIG. 8A illustrates a side view of the same dispenser, the top article being entirely pulled out of the cartridge;

FIG. 8B shows a cross sectional frontal view of the same;

FIG. 9A illustrates a side view of a dispenser with skin-adherent covers attached to flexible cards within, the dispenser not containing springs nor platform;

FIG. 9B shows a perspective view of the same dispenser;

FIG. 10 shows a cross sectional frontal view of the same dispenser, the top article being partially pulled out of the cartridge;

FIG. 11 shows a cross sectional frontal view of the same dispenser, the top article being further pulled out of the cartridge;

FIG. 12 shows a cross sectional frontal view of the same dispenser, the top article being entirely pulled out of the cartridge;

FIG. 13A illustrates a side view of an article dispenser including trays, and suitable for drawing of a top article up through an upper opening;

FIG. 13B shows a perspective view of the dispenser including trays;

FIG. 14A show an enlarged side view of an article including tabs, tray and tabs having a raiseable part, suitable for the dispenser shown in FIGS. 13A and 13B;

FIG. 14B shows a perspective view of the article including tabs and tray;

FIG. 15A shows a side view of the same dispenser, having two stacks of articles held over springs;

FIG. 15B shows a cross sectional frontal view of the same;

FIG. 15C shows the same in an exploded view;

FIG. 15D shows a first perspective view of the article;

FIG. 15E shows a second perspective view of the article;

FIG. 16 shows a view in perspective of an article dispenser including trays, and suitable for drawing of a top article by sliding it out through an upper opening;

FIG. 17A shows a top view, of an article suitable for the dispenser shown in FIG. 16;

FIG. 17B shows a side view of same;

FIG. 17C illustrates a perspective view of the same;

FIG. 18A shows a side view of the same dispenser;

FIG. 18B shows a cross-sectional frontal view of the same; and

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FIG. 18C shows an exploded view of the same;

FIG. 19 shows an isometric view of an opened dispenser with double openings for dispensing sticky articles; and

FIG. 20 illustrate an isometric exploded view of an opened dispenser with double openings with stored as well as dispensed sticky articles.

#### DETAILED DESCRIPTION OF THE EMBODIMENTS

The adhesive article embodiments described hereinbelow provide individual skin-adherent covers ready to be immediately adhered onto a wound in a simple way.

The adhesive skin-adherent covers are similar to an ordinary type as far as having a surface of skin-adhesive material on one face of the skin-adherent cover, but include other novel features.

Liners such as thin films of paraffin or PTFE may cover at least the skin-adhesive material until close to the time the skin-adherent cover is applied to the affected area, as in commercially available plasters for example.

However, one of the advantages of the adhesive skin-adherent covers suitable for use in the embodiments is that in contrast to some commercially available skin-adherent covers, it is exceedingly easy to remove wrapping on the skin-adherent covers prior to application to skin, with minimal risk of accidental contact with any part of the cover on the side that includes the skin-adhesive material, and with minimal exposure of the unwrapped cover to the environment thanks to the amenability to quick and easy manipulation of the articles.

Some embodiments further allow easy packing and unpacking the skin-adherent covers from dispensers, and/or applying the skin-adherent covers, while easily keeping the skin-adherent cover sides untouched throughout.

Some embodiments also allow easily removing self-peeling liners off skin-adherent covers during the unpacking of the skin-adherent covers from the dispensers.

Articles including easily-applied covers have the following common features: a skin-adherent cover, at least one handle and at least one protective element, in which the cover includes: a side comprising skin-adhesive material, an opposite side and edges.

Each protective element is protective of the cover from mechanical damage, warping from environmental conditions etc., and each protective element extending to or beyond all edges of the cover, and adhered to the cover opposite side.

The handle is coupled to the protective element.

The protective element is configured to adhere to the cover less than the cover adheres to skin.

Another protective element and another handle are situated to the side of the cover that includes the skin-adhesive material, such that pulling a handle coupled to the opposite side easily detaches the coupled cover from the protective element and handle situated to the side of the cover that includes the skin-adhesive material.

In addition to the embodiments having the common features described above, which will be described in greater detail below for several embodiments, the embodiments allow easily applying the covers to skin by for example adhering the cover (still coupled on the opposite side to a protective element and to a handle) to skin, and employing the handle to twist the protective element until detachment of said protective element from the cover.

In some embodiments, the articles may be provided as individual units, which may for example be individually purchased, or for example a quantity may be purchased as freely dispersed individuals in a bag.

Alternatively, the articles may be provided along with a dispenser, which again may store them freely dispersed, or alternatively arranged in the dispenser, for example in stacks.

In some embodiments, a tab (handle) which is used for pulling an article out of the dispenser is also an element that protects the adhesive part of the article above it in the stack.

The dispensers may provide additional protection to the covers. Such protection may include mechanical protection, protection from environment (for example precipitation, heat and/or sunlight), as well as maintain cleanliness or even sterility.

An individual article including a cover is shown in perspective in FIG. 1. The sticky article 20 comprises: a skin-adherent cover 22, a first 28A and a second 28B handle and a first 26A and a second 26B protective element.

The cover 22 comprises: a side 25A comprising skin-adhesive material 24, an opposite side (not shown) and edges (only one edge 25B visible in the figure).

The protective elements 26A, 26B are protective of the cover 22, each protective element 26A and 26B extending to or beyond all edges of the cover 22, the first said protective element 26A adhering to the cover opposite side and the second said protective element coupled to the cover side 25A comprising skin-adhesive material 24.

The first handle 28A is coupled to the first protective element 26A, and the second handle 28B is coupled to the second protective element 26B.

The first protective element 26A is configured to adhere to the cover 22 less than the cover 22 adheres to skin (not shown).

The article 20 is typically provided with protective elements 26A and 26B in intimate contact with each other, preferably adhered to each other. FIG. 1 shows the article in a state wherein the protective elements 26A, 26B are partially apart to demonstrate that the article is configured to allow detachment of said second element 26B and second handle 28B from said cover 22 when said first 28A and second 28B handles are pulled apart, for example by firmly holding each handle between fingers of a hand and pulling the handles in opposite directions.

The article 20 also includes liners 27A, 27B non-adherently contacting the skin-adhesive material 24. Such liners may prevent contact of the protective element 26B with the skin-adhesive material 24. They may also help maintain cleanliness or sterility of a pad 23 on the cover 22, for example in sterile plasters.

As shown in FIGS. 2a-2D, applying the cover 22 after pulling the first 28A and second handle (not shown) apart includes:

adhering the cover 22 to skin 10, FIG. 2A;

employing the first handle 28A to twist the first protective element 26A (FIGS. 2B and 2C) until detachment of said first protective element 26A from the cover 22 (FIG. 2D).

The dispenser embodiments described hereinbelow have the following common features:

A cartridge, at least one stack of articles and at least one resilient element.

The cartridge has walls, at least one bottom, at least one opening and at least one cap configured to snugly cover the openings.

Each article comprises: a skin-adherent cover, handle and protective element, the cover comprising: a side comprising skin-adhesive material, an opposite side and edges, the edges facing cartridge walls;

the skin-adhesive material being on the side of the cover facing away from an opening;

the handle coupled to the protective element, the protective element attached to the side of the cover facing said opening; the protective element extending to or beyond all edges of the cover, said protective elements configured to:

protect the covers from said walls of the cartridge;

adhere to a cover less than the cover adheres to skin;

the at least one resilient element within the cartridge positioned in the cartridge below the stacks and configured to urge the skin-adherent articles in the stacks toward said opening, the dispenser configured to allow removal of a top article from a stack out of said opening.

In addition, all the dispensers described below are configured to seal the skin-adherent covers from the environment outside the cartridge and to protect a cover from an adjacent article in the stack.

Reference is made to FIG. 3 illustrating elevated perspective view of a closed dispenser 100 in accordance with one embodiment.

The cartridge 110 includes a cap 112 that has an opening (not shown) covered by a slideable lid 114.

The lid 114 is shown as closing the opening, which is the preferred position of the lid 114 when the dispenser 100 is not in use, in order to isolate the interior of the cartridge 110, containing covers such as sterile bandages, from the environment outside the cartridge.

FIG. 4 shows open dispenser 100 in perspective view. The view is at angles identical to those of FIG. 3. Lid 114 is slid all the way back to the right, exposing upper opening 116.

FIGS. 5A and 5B illustrate a side view and a cross sectional frontal view, respectively, of the article dispenser 100, with the lid 114 slid back as in FIG. 4. The cartridge 110 includes walls 115 (two of the four walls being shown in FIG. 5B), upper opening 116 and bottom 117.

Plurality of articles 120 are organized as a stack 121 within cartridge 110.

FIGS. 5C and 5D show two views of an article 120 including a bandage 122, card 126 and tab 128, suitable for installation in dispenser 100.

Each article 120 as shown in FIGS. 4C and 4D is provided with an adhering bandage 122 shown in FIGS. 4b and 4c that is placed beneath card 126. Card 126 is a protective element that helps prevent damage or disfigurement of the bandage 122. One side of adhesive bandage 122 is provided with a pad 123 substantially in the center of adhesive bandage 122 and adhesive material 124 that covers the area of bandage 122 that surrounds pad 123. The side is adherable onto an area of skin.

Another, opposite side of adhesive bandage 122 is provided with an adhering material adhering the adhesive bandage 122 to card 126. This side is outwardly placed when the bandage 122 is applied to the body.

The upper side of card 126 is glued to a tab 128. Tab 128 acts as a handle by which the top skin-adherent cover 120A may be removed from the dispenser 100.

The dispenser 100 also includes springs 130, resilient elements that urge the articles 120 toward upper opening 116, and a platform 140 positioned between the bottom article 120B and the springs 130, capable of allowing urging of the articles 120 toward the upper opening 116 and protecting the skin-adherent covers 122 from the springs 130.

As long as there are articles 120 in the cartridge 110, the tab 128A of top article 120A will be positioned in upper opening 116.

Reference is now made to FIGS. 6A and 6B illustrating a side view and a cross sectional frontal view respectively of the dispenser 100 shown in FIGS. 4 and 5 during the process of pulling a top article 120A out of the dispenser 100.

When a user wants to place an adhesive skin-adherent cover **122A** onto a wound, she pulls tab **128A** that is attached to the top of card **126A** and protrudes through opening **116**. As article **120A** rises through opening **116**, card **126A** is compressed by the sides of the opening **116**, so that the sides of the card **126A** (the left and right sides in FIG. 6B) are drawn towards each other, dragging upwards the tab **128B** of the article **120B** under the top article **120A**.

As shown in FIG. 7, further pulling the top tab **128A** straightens the edges of the tab **128B** underneath. Upon full withdrawal of the top article **120A**, as shown in FIG. 8, the article **120B** underneath becomes the top article in the cartridge **110**, tab **128B** having the same form as the former tab **128A** had when its article **120A** was top article in the cartridge **110**.

Card **126B** now blocks opening **116**, which may suffice to protect the bandages **122** (or in other embodiments plasters, skin patches etc) from contamination. The pad **123** and optionally the adhesive material **124** surrounding the pad **123** may additionally be covered with a liner (not shown) to further help maintain the sterility of the pad **123** and optionally help separate the pad **123** from articles **120** below it.

Tab **128** may be made of resilient yet stiff material, which allows pushing the top tab **128A** back into the cartridge **110** under the upper opening **116**, to allow closing of the lid **114** over the opening **116**, to help protect the bandages **120** from damage and from contamination. Upon sliding the lid **114** back again, the top tab **128A** preferably pops back up to its former raised position.

The top article **120A** in each stack **121** may be provided with the tab already raised, to ease first use of the dispenser.

FIGS. 9A and 9B show a side view and a perspective view, respectively, of another embodiment, a dispenser **200** also having articles **220** with cards **226**. Compared to the dispenser **100** described above, this dispenser **200** has a more compact cartridge **210** with lower walls.

FIG. 10 depicts a cross sectional frontal view of the dispenser **200**. Due to the relatively low walls of the dispenser **200**, the dispenser **200** holds relatively few articles **220**. Therefore, resilient cards **226**, bent in the cartridge **210** upwards toward the opening **216**, may have sufficient force to urge the articles **220** up, sufficiently to expose the top tab **228A** out of opening **216** and let the top card **226A** block the opening **116**. A spring may not be required to help urge the articles **220** upwards, and a platform is consequently also not required.

As shown in FIGS. 11 and 12, similar to the formerly described dispenser **100**, pulling a top tab **228A** so that a top article **220A** is drawn out of the dispenser **210** brings about pulling out of a second tab **128B** on an article **220B** underneath the top article **220A**. It is notable that the tension applied during the withdrawal of the top article **220A** may substantially assist in moving the article **220B** underneath up towards the opening **216**.

A dispenser **200** may be prepared by adhering a card **226** to each cover **222** on the side opposite the side with skin-adhesive material, extending the card **226** beyond all sides of the cover **222** to protect the cover **222** from the walls of the cartridge **210**; partially connecting at least one tab **228** to each card **226**, to the face of the card **226** away from the side of the card adherent to a skin-adherent cover **222**, leaving a part of the tab **228** raiseable; and placing articles **220** in stacks **221** in the cartridge **210** with the skin-adhesive material **223** exposed in a direction away from the upper opening **216**.

In embodiments wherein the covers are sterile, all of the dispenser components may be sterile during packing the dispenser. After packing the dispenser a snugly fitting cap may

be placed over the upper opening, after which the dispenser may be used under non-sterile conditions, the dispenser being configured to maintain the sterility of the covers.

It is notable that in some embodiments the tabs may be simply coupled to the covers above them in the stacks. The mere contact of the covers with the tabs is sufficient to enable raising the tabs of the articles when the articles above them are removed from the cartridge. Alternatively, the covers may be lightly adhered to the tabs below them in the stack.

Furthermore, some embodiments (not shown) may not include a cartridge, the embodiments consisting of stacks of articles only. In such embodiments the covers are typically lightly adhered to the tab of an adjacent article in the stack.

Generally speaking, the definition of an article in a stack of articles not in a cartridge can be similar to the definition of the individual article described in FIG. 1 and above: an individual article comprises: a skin-adherent cover, a first and a second handle and a first and a second protective element.

Looking at a stack of articles positioned as in the stacks described in FIGS. 5-12 and above, namely the first handle and first protective element is above the cover and the second handle and second protective element are below the cover, the stack can be defined as follows: the second handle of each article above the bottom article in the stack is the first handle of the adjacent article below.

FIGS. 13A and 13B illustrate a side view and a perspective view, respectively, of a skin-adherent cover dispenser **300** in accordance with another embodiment. In this embodiment, the protective elements are flexible trays **326**, and a cartridge **310** includes a removable cap **312**, the removed cap **312** capable of allowing drawing of a top article **320A** out through the upper opening **316**. The cap **312** may be connected via a hinge to the dispenser **310**.

As shown in an enlarged view in side view and perspective views of an article **320**, FIGS. 14A and 14B respectively, the handles are tabs **328** one of each tray **326**, the tabs **328** each having a part connected to the tray **326** and a raiseable part. A bandage **322** is adhered to the second, opposite side of side of tray **326**, the bandage **322** including a sterile pad **323** and a skin-adhesive part **324**.

Returning to FIGS. 13A, 13B, the bandages **322** (and coupled trays **326** and tabs **328**) may be sufficiently small to allow placing more than one stack **321** of articles **320** in the cartridge **310**. The articles **320** are placed in the cartridge **310** with the skin-adherent material **323** facing away from the upper opening **316**.

A top article **320A** may be removed from the dispenser **300** by first removing the cap **312** and pulling up a tab **328A** of a top article **320A**, see the top right tab **328A** in FIGS. 13A, 13B. Alternatively to raising the tab **328A** with a finger for example, the tabs **328** may be resilient, so that the tab **328A** automatically rises when the article above the tab is withdrawn from the cartridge.

FIGS. 15A-15E show additional views of the dispenser **300** and its components.

As shown in the cross sectional frontal of the dispenser **300** in FIG. 15B, a coiled spring **330** is placed between the bottom of the cartridge **310** and the bottom article in each stack **321** of articles **320** in the cartridge **310**. The size of the upper opening **316** as well as the size of the trays **326** may be designed such that the spring **330** forces the trays **326** against the cartridge, as shown in the exploded view in FIG. 15C, thus sealing the b **322** from the environment. Removal of the articles **320** is possible due to the flexibility of the trays **326** as well as the sizes of the opening **316** and the trays **326**, which allow squeezing the trays **326** through the opening **316** by pulling the tabs **328**, which sufficiently bend the attached

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trays **326** to get through. On the other hand, the trays are configured to protect the attached bandages (not shown in FIGS. **15A-15E**). The adhesive skin-adherent cover of the removed article **320A** (FIG. **13A**) is applied by pressing the tray to the skin, by either holding onto the tab **328A** or directly onto tray **326A**. Suitable materials for construction of the trays may be plain laminated cardboard or polycarbonate or ABS for example.

Yet another dispenser **400** is shown in FIG. **16**, in which wherein the protective elements are trays **426** and the cap **412** is removable, the removed cap **412** capable of allowing drawing of a top bandage for example (not shown) out through the upper opening **416**.

Tracks **418** proximal to upper opening **416** are capable of holding and allowing sliding a tray **426** adhered to a bandage in a stack of articles out of the cartridge **410**.

FIGS. **17A**, **17B** and **17C** show a top view and top and bottom perspective views, respectively, of an article **420** including a, a tray **426**, a separator **429** and a tab or handle **428**. The tab **428** has a part exposed beyond one end of the tray **426**, the skin-adhesive part of the bandage allowing attachment of the top bandage to skin.

FIGS. **18A**, **18B** and **18C** show a side view, a cross-sectional frontal view and an exploded view of the dispenser **400**.

Springs **420** are provided within cartridge **410** and beneath plurality of articles **420** that urge the articles **420** up towards opening **416** of the cartridge. The top article **420A** will be positioned exposed to opening **416**.

Note that under the articles and above the spring **430** there may be a bottom tray **426** without a skin-adherent cover attached to it, since the tray is in direct contact with a spring **430**. Alternatively, the separator **429** may be configured to sufficiently distance the spring **430** from the bottom cover and allow placing a bandage or other cover under the bottom article **420**.

The trays **426** are preferably sized to be slidingly held in tracks **418**. Trays **426** are sized and placed in the cartridge **410** so that when placed therein in a stack, as clearly shown in FIG. **18B**, a gap **419** remains between them and the wall on which the upper opening **416** is positioned. In addition, articles **420** are placed in the cartridge **410** with the part of the tab **428** extending beyond one end of the tray **426**, facing the wall of the cartridge **410** on which there is the opening **416**. With this arrangement of dispenser **400**, as shown in FIGS. **18B** and **18C**, the exposed parts of the tabs **428** are slightly bent within the cartridge **400**, providing a seal that prevents or helps to prevent contamination of the bandages. The top article **420A**, being partly exposed in opening **416**, is not bent and thus is accessible for withdrawal when the cap **412** is removed.

Each article **420** seals and protects the article **420** below it. To use a top article **420A**, a user may pull the exposed tab **428A** of the top article **420A** to help slide the article **420A** out of the upper opening **416**, to provide better accessibility for a user to the bandage.

As shown in FIG. **13A**, the dispenser cartridges may further be provided with a plurality of holes **350** for holding swabs **354**.

The buds of the swabs may be dipped in an anti-infection material so that the user, before applying the skin-adherent cover, can clean or disinfect the wound.

The cartridges may further have suction pads (not shown) attached to the cartridge bottoms, capable of holding the dispensers immovable during removal of a top skin-adherent article from a skin-adherent cover article stack.

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FIG. **19** shows an isometric cross-sectional view of a dispenser **500** including a cartridge **510** with double openings **516A**, **516B** for dispensing sticky articles.

The cartridge **510** is similar to the cartridge **210** shown in FIGS. **9A** and **9B** in all respects. The other dispensers described above may be similarly modified to provide multiple openings for dispensing covers.

Notably, in such multi-compartmented embodiments there is no "up" and "down", However, for the sake of simplicity, the embodiments above which do have just one opening (and bottom) were described in terms of "up" and "top" and "low" or "bottom".

The cartridge **510** thus has walls **515**, openings **516A**, **516B**, and bottoms **517A** and **517B**.

FIG. **20** illustrate an isometric exploded view of an opened cartridge **510** with double openings **516A**, **516B**, with stored as well as dispensed sticky articles **520**; A user may pull a top article **520A** from opening **516A** or a top article **520B** from opening **516B**. Note that conveniently dispensers with multiple openings may allow dispensing variously sized articles, by choosing and opening and pulling out a top article out through the selected opening (not shown).

It is notable that the structure of the top article in a new stack (from which no articles have been drawn as yet) may be different from the structure of the articles below in the stack, since the handle is not raiseable by the action of pulling out an article above it,

The bottom article in a stack may not include a handle below it, as there are no articles left to draw out when the bottom article is drawn out. Therefore, it has been most convenient to define the articles above as each having a handle above a sticky cover, even though most articles in a stack also have a handle coupled below the same cover.

Comparing to for example plasters, which are covers with skin-adhesive material wrapped in wrapping, the handles in some of the embodiments above may act as both means to pull their coupled articles for application, as well as being a non-stick layer that protects the skin-adherent material of a cover before pulling out the cover. This way, there is minimal wasted material, and the cover is pulled out fully exposed, while the wrapping remains behind to act as the handle of the next article.

It is stressed that all of the embodiments described above and in the figures are considered to be suitable for use for a multitude of skin-sticky covers, including but not limited to:

Adhesive bandages of all shapes and sizes; nicotine patches; anti snoring patches for opening nostrils; medicinal patches for drugs that can be absorbed by the skin; electronic patches that are used for electromagnetic monitoring (for monitoring the heart, brain and so on); Electronic patches that contain RFID components; hormone patches (Including pregnancy preventing patches; and skin care patches, for cleaning pores and/or preventing acne. It is further stressed that the invention includes methods and apparatuses for applying sticky articles of all kinds, such as stamps and bumper stickers, which include providing a cover with a side adhesive to a particular surface, and an opposite side to which a protective element and handle are stuck, the articles being connected to each other in one the configurations in the embodiments described above, Such methods and apparatuses have the same advantageous features: ease of peeling off a cover, and minimal waste of material.

It should be clear that the description of the embodiments and attached Figures set forth in this specification serves only for a better understanding of the invention, without limiting its scope as covered by the following Claims.

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It should also be clear that a person skilled in the art, after reading the present specification can make adjustments or amendments to the attached

Figures and above described embodiments that would still be covered by the following Claims.

The invention claimed is:

**1.** A sticky article comprising:

a skin-adherent cover having a first side provided with skin adhesive material, a second opposite side, and edges;

a first handle and a second handle; and

a first protective element and a second protective element protective of the cover, wherein each protective element extends to or beyond said edges of the cover, wherein the first protective element adheres to said second opposite side less than said first side comprising skin-adhesive material adheres to skin, and the second protective element attached to said first side comprises skin-adhesive material, and wherein

said first handle is coupled to the first protective element and said second handle is coupled to the second protective element,

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and the article is adapted and configured to:

allow detachment of said second element and said second handle from said skin adhering cover when said first handle and said second handles are pulled apart while the first element remains attached to the cover, and to allow detaching the first element from an adhered cover by twisting the first handle.

**2.** The article of claim **1**, further comprising at least one liner non-adherently contacting the skin-adhesive material, and wherein the second protective element adheres to the first protecting element.

**3.** A stack of articles of claim **1**, wherein the second handle of each article above a bottom article in the stack is a first handle of an adjacent article below.

**4.** A dispenser comprising at least one stack of articles of claim **3** and a cartridge comprising walls, at least one bottom and at least one opening.

**5.** The article of claim **1**, wherein the cover is selected from one or more of the group: skin patch, poultice, plaster and bandage.

\* \* \* \* \*